# MODIS TECHNICAL TEAM MEETING

## January 25, 1996

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Al Fleig, Dorothy Hall, David Herring, Paul Chan, Ed Masuoka, Bill Barnes, Steve Ungar, Bruce Guenther, Chris Justice, Harry Montgomery, Barbara Putney, Wayne Esaias, Bob Murphy, Ken Anderson, Locke Stuart, and Yoram Kaufman.

### 1.0 SCHEDULE OF EVENTS

| | |
|---|---|
| **Jan. 15** | **Semi-Annual Reports were due to Barbara Conboy** |
| Feb. 20 - 21 | MODLAND-SDST Workshop at GSFC |
| Feb. 20 - 21 | New Millennium Workshop at JPL |
| Feb. 27 - 28 | MODIS SDST Science Advisory Panel at GSFC |
| March 18 - 19 | EOS Test Site Meeting {where?} |
| March 20 - 22 | MODIS Science Software Review at Valley Forge |
| May 1 - 3 | MODIS Science Team Meeting at GSFC |
| May 16 - 17 | SWAMP Land Review |

### 2.0 CORRECTION TO PREVIOUS MINUTES

In Section 2.4 of the Dec. 14, 1995, MODIS Technical Team Meeting Minutes, Herring wrote:

> ÒGuenther told the Team that Bob Evans wants the Level 1A and Level 1B data to be totally deleted while MODIS is in night mode because deleting it will save significantly on transmission costs. MCST has agreed to delete its night mode Level 1B data. Guenther asked if SDST will delete the Level 1A data. Putney responded that as long as the metadata is clear and the history is maintained, SDST has no problem with deleting the night mode 1A data.Ó

That information is incorrect. Actually Guenther announced that the night mode data for the reflected solar bands (bands 1-19 and 26) already are only fill data, and they will be deleted from the Level 1B data stream. He asked SDST to do the same for the Level 1A data stream (in the night mode). These data are already fill data because they are not in the telemetry data stream, so no useful information would be lost.

### 3.0 MINUTES OF THE MEETING

#### 3.1 MCST Science Advisory Panel

Esaias reported that he is writing the findings of the Science Advisory Panel (SAP) meeting with MCST. Overall, he said, the SAP is pleased with MCSTÕs progress, management approach, tradeoff studies, and priorities. Esaias feels that keeping MCSTÕs manpower up is a concern.

The SAP agrees that emphasis should be placed on reflectance-based calibration, rather than radiance-based. But they still would like a parallel calibration effort using both methods as much as possible.

Esaias stated that MCSTÕs three audits of the Science Team and the two SAP Meetings were very useful and positive exercises. He hopes the government furloughs and shrinking budget allow those exercises to continue.

**3.2 Land Discipline Group Reports**

Justice reported that the MODLAND Validation Plan is currently being developed. Justice is collecting inputs from group members and integrating them into a single document. He is encouraging the use of Acrobat in MODLANDÕs distribution of review materials.

Justice reminded the Team of the MODLAND-SDST Meeting planned for Feb. 20 - 21. Discussion at that meeting will focus on lessons learned from the beta delivery and from interaction with the DAACs. Additionally, synthetic data sets will be discussed, as well as whom will be responsible for delivering what, and when.

Justice announced that the EOS Test Site Meeting has moved to March 18 - 19. He noted that MODLAND will try to accommodate and complement the Ocean GroupÕs test site plans. The meeting overlaps the MODIS Science Software Review (SSR) planned for March 20 - 22 at Valley Forge.

Justice said that part of MODLANDÕs Version 1 software planning includes a discussion of simulated data sets, which the group is working on now. Justice wants a plan whereby MODLAND can check the processing of its code end to end.

MODLAND is has asked for 1-km data from EDC. Justice stated that the network link is now up and running and MODLAND is waiting for the data.

He told the Team that Steve Running is close to delivering his beta code for the LAI FPAR product. Robert Wolfe traveled to Montana to work with Running on developing the code.

**3.3 SDST Reports**

Masuoka stated that Paul Fisher and Robert Wolfe, of SDST, have defined an approach for developing MODIS metadata and an e-mail has been sent to the Science Team with a sample metadata dictionary. Team members and/or their

software developers are encouraged to comment on the approach and review the entries in the metadata dictionary, adding new items required by their products.

Masuoka said he sent e-mail to MODIS Science Team members regarding production rules for instrument team software in EOSDIS. These production rules will be discussed in a teleconference with HAIS and the ESDIS project on Feb. 5, 1996. A white paper on production rules will be mailed out to team members shortly. HAIS would like to know within the next month if additional production rules will be needed to support the execution of MODIS software, and which rules a given algorithm needs. Masuoka said SDST will participate in those discussions and interested Science Team software developers, as well as their principal investigators, should feel free to participate as well.

Masuoka reported that SDST has completed testing of beta code for individual products and is beginning the end-to-end test of processing selected products from Level 0 to Level 3.

Masuoka asked team members to let SDST know if any of their products expected in Version 1 will not be delivered in the February through May time period.

3.3.1 Version 1 Testing

Fleig recently attended a meeting between Hughes and ECS personnel in which they discussed testing in the Version 1 timeframe. Fleig said it was a positive meeting. ECS is working with SDST and Hughes to make sure they can run operational tests of MODIS software in the Version 1 timeframe. The idea is to make sure ECS can operationally process MODIS data at its full rate at the time of launch. Fleig said he is encouraged by ECSÕ acceptance of the need for doing this exercise.

3.3.2 ECS Plans to Buy Hardware

Putney reported that she is concerned that ECS plans to buy at-launch computer hardware before they even receive MODISÕ Version 1 software. She pointed out that MODIS has already had some growth in its processing timing and probably will experience more. She sees it as ÒriskyÓ to purchase hardware 1.5 years before launch in that there is potential to mismatch anticipated at-launch capabilities with actual at-launch processing requirements. Putney noted that ECS claims that they need a lot of time for testing and integration of their system prior to launch. However, she feels that 1.5 years before launch is too early to begin.

Putney told that Team that she submitted MODISÕ Quality Assurance (QA) requirements to H.K. Ramapriyan based upon inputs from Science Team members. She stated that MODIS QA data will consume 10 percent of the volume of our products transmitted over networks and another 5 percent will be

transmitted over various storage media. Previously, SDST had estimated that 100 percent of product volume needed to be transmitted over the networks.

### 3.4 MODIS Project Reports

Anderson reported that SBRS still has not received replacement 184-pin connectors from the vendor. They are developing an alternate procedure.

At the last MODIS Technical Team Meeting, Anderson announced that there was an along-track shift for the cooled bands following thermal and vibration testing that has caused a misalignment of those bands. The shift is being investigated by SBRS. Speculation is focusing on the radius cooler or its mounting to the aft optics.

Barnes added that the MODIS Protoflight Model (PFM) is being assembled now, and that the scan mirror is being mounted at SBRS.

#### 3.4.1 All But One Focal Plane Alignment Meets Specification

Barnes showed a table that listed the misalignment of the various focal planes with respect to one another. The table was developed using test data from the PFM Optical Bench Assembly (OBA). All of the focal planes met the misregistration requirement of less than 0.2 pixels except the LWIR to NIR alignment of 0.203 pixels.

### 3.5 MCST Reports

Guenther announced that the Level 1B MODIS software is scheduled for delivery by the end of February, after which MCST will begin system-level testing. However, Guenther pointed out that MCST is not staffed to begin system-level software testing. Moreover, Guenther feels that system-level software testing should be conducted by an independent source anyway, and is, therefore, considering temporary independent sources.

Last week, MCST went on a group retreat to plan its work program for 1996. He feels the retreat was a success. One issue MCST discussed is when should it develop a scatter correction algorithm and when is it desirable to enter the coding for this algorithm into the overall MODIS processing software. MCST is cautious about how to implement a correction algorithm in the production processing system without testing it on actual MODIS data. Hence, it may be imprudent to implement scatter corrections until after launch.

Esaias added that the MCST SAP agrees with MCSTÕs approach, in which MCST will provide research tools for use in the evaluation of scatter effects in the data.

### 3.6 Atmosphere Discipline Group Reports

Kaufman reminded the Team that the *Journal of Geophysical Research* (JGR) is planning a special issue on aerosol sensing and atmospheric correction. He

expects that MODIS Team members will submit three to five articles for that issue. Kaufman feels that these publications will nicely complement MODISÕ peer review efforts.

### 3.7 New MODIS Proposals

Murphy announced that there will be a briefing by MODIS group leaders to Murphy, Diane Wickland, Ghassem Asrar, and Robert Frouin on Feb. 9 to discuss the topics solicited for MODIS in the NRA. The MODIS Science Team will not see the proposals or be involved with the review. Murphy said that about 90 percent of the peer review panel has now been identified. The review dates of the new proposals are tentatively scheduled for March 11 - 13.

## 4.0 ACTION ITEMS

### 4.1 Action Items Carried Forward

1. *SDST* : distill the questions and concerns about metadata into a list and prepare a strawman for resolving the concerns.